

C. H. CHATFIELD

TECHNICAL MEMORANDUMS

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS.

**CASE FILE
COPY**

No. 304

SUGGESTIONS FOR COURSES OF INSTRUCTION IN AVIATION.

By Professor Poeschel.

From "Luftfahrt," December 5, 1924.

March, 1925.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS.

TECHNICAL MEMORANDUM NO. 304.

SUGGESTIONS FOR COURSES OF INSTRUCTION IN AVIATION.*

By Professor Poeschel.

Since the war, aviation has entered upon a new stage of development. In the form of air traffic, she is now advancing to meet very practical needs. She is therefore no longer served by sentimental enthusiasm. She wishes to be comprehended not simply by the heart but above all by the head. Unfortunately, we here meet many serious misunderstandings, even among people otherwise well educated. Hence the need of disseminating definite information even among the young.

An excellent means of accomplishing this result is the giving of lecture courses on aviation and it is highly encouraging that such courses are constantly becoming more popular with the German aviation clubs. At the request of the president (Dr. Buff) of the German Federation of Aviation Clubs (D.L.V.), I will here make a few suggestions on the establishment of such courses. Thus far they have taken two different forms.

1. Lecture courses for the education of teachers to represent aviation in the schools, such as have already been inaugurated in Dresden, Breslau and Frankfort-on-the-Main. Teachers thus educated are qualified, after further study of the rich and alluring scientific material available, to instruct the interested

* From "Luftfahrt," December 5, 1924, pp. 278-279.

pupils in their schools in a way adapted to their age and to awaken interest in aviation on the part of all their pupils.

For courses of this kind, it is advisable to come first to an understanding with the school board and with the local branch of the German Philological Society, for teachers in the higher schools of every kind, as likewise with the corresponding teachers' club for teachers in other grades. It is also desirable to come to a mutual agreement regarding the important but debatable question as to whether the courses should be given during the school sessions or during the vacations. The school authorities have shown a friendly attitude toward the lecture courses thus far instituted. The Prussian Ministry for National Education, in particular, is prepared to include lectures in the field of aerology and aviation in connection with the courses it has already established for teachers of mathematics and physics in universities and technical high schools and will gladly entertain proposals from the aviation clubs. The teachers' clubs will also gladly give further information. Moreover, there is no objection to admitting to these courses persons other than teachers.

2. Public lecture courses for audiences from all classes, as in Munich and Leipzig. Such courses are especially desirable for members of aviation clubs, who should become as conversant as possible with the subject. The lectures should be stim-

ulating and should not consume too much time.

It is highly desirable for the course to be in charge of some expert who can be present at every lecture, so as to give any desired information.

In four courses the lectures were distributed over four or five days. In Dresden and Frankfort, ten lectures and in Leipzig fifteen lectures were given four days. In Breslau ten lectures were given in five days. Munich had its twelve lectures distributed over twelve weeks, one being given every Friday evening. At every lecture opportunity was afforded for discussion, questions and additions. All five courses were well attended, the audiences were appreciative and the lecturers were much pleased with the attentiveness of the listeners.

The costs were met in various ways. In Dresden the course was free, excepting for a small registration fee to cover tips, etc. In Breslau the "not inconsiderable costs" were met entirely by the Silesian group of aviation clubs. In Leipzig, the charge for the entire course was 50 gold pfennigs; for single lectures, 20. A reduction was made to club members. Students paid half the price. In Munich the charge for the whole course was two gold marks; members were admitted free, as likewise young men who obligated themselves to attend the entire course and take an examination at its close. A brief printed summary of the important points was generally distributed among the audience.

Since each form of lecture course serves a special purpose and since the aviation clubs, which have held such courses, intend to repeat them, it is recommended that courses for the education of teachers and popular lecture courses be given alternately.

In order to facilitate the arranging of such courses, we are giving the outline of the courses already given. Since the courses were mostly limited to a few days, it was not always possible to take up all the subjects. In making the selection, the available lecturers were often the deciding factor. In the following list, where not otherwise stated, the lecturer resided in the city where his lecture was given.

I. GENERAL INTRODUCTION.

Dresden: Prof. Poeschel, member of Educational Council, Meissen.

Breslau: Prof. Schneck.

Leipzig: Prof. Wiener.

Frankfort: Prof. Wachsmuth.

II. HISTORY OF AVIATION.

Breslau: Civil Engineer Stumpf. - "Development of Aviation."

Munich: Ex-Captain Müller. - "Development of Aviation, with especial reference to the Bavarian air forces."

III. THE AIR.

a) Aerology and Meteorology

Dresden: Prof. Alt, Chief of Saxony Weather Bureau, "Aerology and Meteorology."

Breslau: Dr. Feige, Chief of the Krietern Observatory, "Physical Bases of Meteorological Observations."

Leipzig: Prof. Weickmann, "Meteorological Information for Commercial Air Traffic."

Munich: Prof. Schmauss, Chief of Bavarian Weather Bureau, "Weather Forecasting."

Frankfort: Dr. Koschmieder, "Aviation and Weather."

b) Air Forces, Helping and Hindering

Dresden: Prof. Trefftz, "Air Forces."

Breslau: Prof. Trefftz, Dresden, "Theory of Air Laws."

Leipzig: Dr. Wiener, "Air Forces" (with experiments).

" : Dr. Schiller, "New Results of the Theory of Air Forces."

" : Prof. Wigand, Halle, "Investigation of the Air by Means of the Airplane."

" : Prof. Weickmann, "Meteorological Bases of Soaring Flight."

IV. FLIGHT WITH GAS-SUPPORTED AIRCRAFT.

a) Balloon Flight

Breslau: Dr. Wolff, "Balloon Sport and the Most Essential Instruments to have on Board."

Leipzig: Engineer C. Weymann, Berlin, "The Free Balloon and its Pilotage."

Frankfort: Prof. Linke, "Theory of Free Balloon Pilotage."

b) Airship Flight

Dresden: Former Zeppelin airship pilot, Major Gaissert, "Airship Flight."

Leipzig: Dr. W. Forster, "Construction and Design of German Airships;" the same, "Flights of the Naval Airship 'L 59' over the Mediterranean, especially its African Journey."

Frankfort: Prof. Eberhardt, Darmstadt, "The American Airship from the Zeppelin Works; Transoceanic and Transcontinental Airship Traffic; Loss of the Dixmude."

V. FLIGHT WITH AIRCRAFT HEAVIER THAN AIR.

a) Gliding and Soaring Flight and Soaring Flight with a Small Auxiliary Engine.

Dresden: Lieut. Tschoeltsch, "The Rhön Results."

Breslau: Engineer Heine, "German Soaring Flight Performances."

Leipzig: Lieut. Tschoeltsch, Dresden, "Rhön Soaring Flights."

Frankfort: Engineer Klemperer, Friedrichshafen, "Gliding and Soaring Flight."

b) Engine-driven Flight.

Dresden: Ex-Captain Clemens, "Engine-driven Flight" (with exper-

iments and illustrations).

Breslau: Ex-Captain Thomas, "Pictures out of the Aviator's Life;"
"Development of Engine-driven Flight."

Breslau: Civil Engineer Stumpf, "The Modern Airplane Engine."

Leipzig: Engineer Offermann, Dessau, "The Science of Flight."

Munich: Government architect, Staufer, "Airplane Engines and
Propellers."

Munich: Engineer Scheuermann, "Airplane Construction."

Munich: Adm. Ass. Genssler, "Aerial Armament and Combat."

Munich: Mayor Schwink, "Airplanes in the Service of the Other
Arms" (Army and Navy).

Frankfort: Engineer Kromer, "Airplane Construction."

VI. MODEL CONSTRUCTION AND FLIGHT.

Dresden: Engineer Elze, "Construction of Models with Experiments
in Flying Them."

Breslau: Observer Hüttmann, "Principles and Importance of Model
Construction."

Frankfort: Exhibition of Flights with Models.

VII. AIR TRAFFIC AND AIR POLITICS.

Dresden: Dr. Poeschel, "Air Traffic."

Breslau: Major Zimmer Vorhaus, "Air Traffic."

Leipzig: Lieut. Roennecke, "Modern Air Traffic."

Munich: Director Angermund, "Modern Air Traffic."

Munich: Mayor Schwink, "Air Politics."

Frankfort: Engineer Offermann, Dessau, "Calculation Problems
in Air Traffic."

VIII. AVIATION IN THE SERVICE OF GEOGRAPHY
AND SURVEYING; AERIAL PHOTOGRAPHY.

Dresden: Lieut. Tschoeltsch, "Aerial Photos of Saxony."

Dresden: Prof. Hegershoff, "Making Topographical Maps from
Aerial Photographs."

Breslau: Dr. Ewald, Berlin, "Aerial Photography and Schools."

Leipzig: Engineer C. Weyhmann, Berlin, "Aerial Photography in
the Service of Geography."

Munich: Lieut. Burger, "Aerial Photography."

Frankfort: Dr. Lüscher, Munich, "Surveying from Airplanes."

IX. RADIOTELEGRAPHY.

Leipzig: Mr. Richter, "Radiotelegraphy from Airplanes" (with
experiments).

Munich: August Bühl, "Radiotelegraphy on Airplanes."

X. AIR LAWS.

Leipzig: Dr. Mothes, "Air Laws."

XI. VISITS OF INSPECTION AND EXHIBITS.

Dresden: Hegershoff "Autokartograph" at the factory of Gustav

Heyde, Dresden-Pieschen.

Breslau: Mark Steel Works, Airplane Section, Krietern Observatory.

At the lectures, abundant use was made of illustration means, such as engines, apparatus, instruments, models, maps and aerial photographs.

Translation by Dwight M. Miner,
National Advisory Committee
for Aeronautics.